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Dense nuclear and quark matter in holographic QCD

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Dense matter in the core of neutron stars is strongly coupled and presents an enormous theoretical challenge. First-principle methods from QCD are currently known only for vanishing or asymptotically large densities, while phenomenological models are usually restricted to either nuclear or quark matter and/or contain many unknown parameters. I will discuss whether and how holographic methods can help. In particular, I will present latest work on nuclear matter and the chiral phase transition to quark matter in the Sakai-Sugimoto model, potentially leading to a strongly coupled equation of state with only 3 parameters that is applicable over a wide density regime.

Summary

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